



Health risks resulting from contaminants transfers in soil-plants systems: case study of Atrazine in *Lactuca sativa*.

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Food safety is presently at the center of great part of scientific and political debates. This represents a field of study in its own right of health risks, including ingestion by humans of hazardous biological, physical, chemical or radiological substances, from contaminated foods during different stages of production. Plant cultivation step is often one of the main sources of contamination, whether of voluntary (pesticide application) or accidental (nuclear, industrial waste, etc.) origin. As a result, the plants growth in an contaminated environment may increase the risk of transfer within the plant, and finally the exposure of humans. Furthermore, pesticides are among the main contaminants investigated in the frame of human health risks resulting from food intakes. However, most of these scientific works focus mainly on their occurrence and persistence in water bodies, and few of them are interested in soil/plants transfer.

In this context, the understanding of the processes governing transfers of pesticides in plants is become a necessity, in particular to prevent human risks linked the ingestion of food produced in contaminated environments. This objective can be reached by studying the pollutants behavior in soils/plants transfers, and using various substances/plants couples.

In our study, we selected a salad/pesticide couple as our experimental model. Atrazine was chosen as model contaminant because of its problematic presence in a large amount of environmental compartments, its physico-chemical properties and because of its long-term toxicity. *Lactuca sativa* has been selected as model plant because of its importance in French agriculture, and specifically in Languedoc-Roussillon.

Salad has been cultivated in peats and irrigated with an atrazine spiked water solution (concentrations from 10 to 100 $\mu\text{g/L}$). Plant growth in such conditions has been compared to a growth in clean condition (irrigation with non spiked water). Measurements of atrazine contents in different parts of the plant were performed by HPLC-MS after a specific extraction pretreatment. At the same time, atrazine evolution in soil has been also determined by chemical analyses after soil sampling all along the salad's development, and extraction by soxhlet.